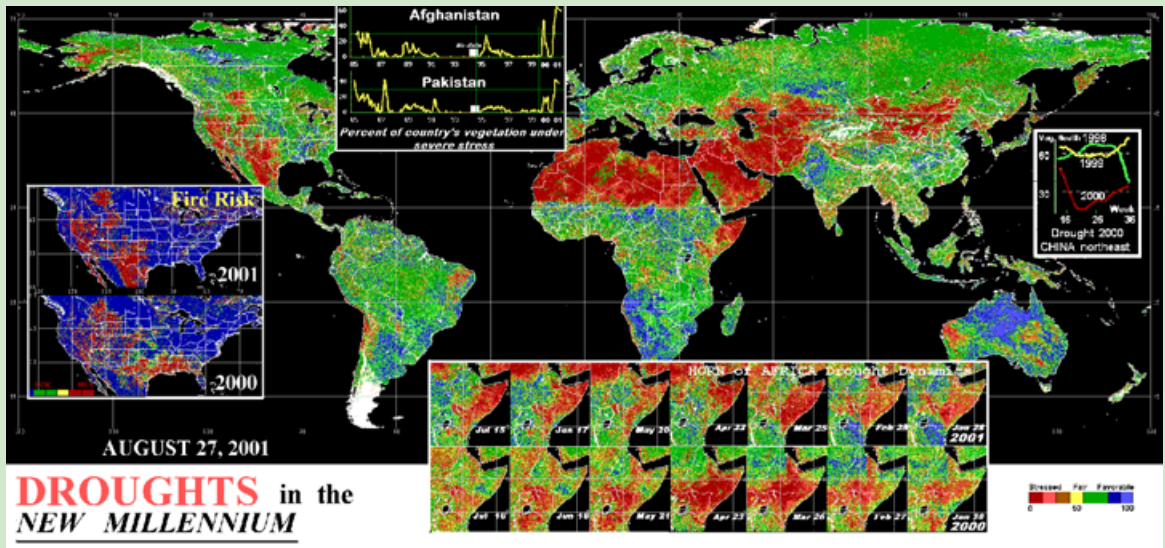


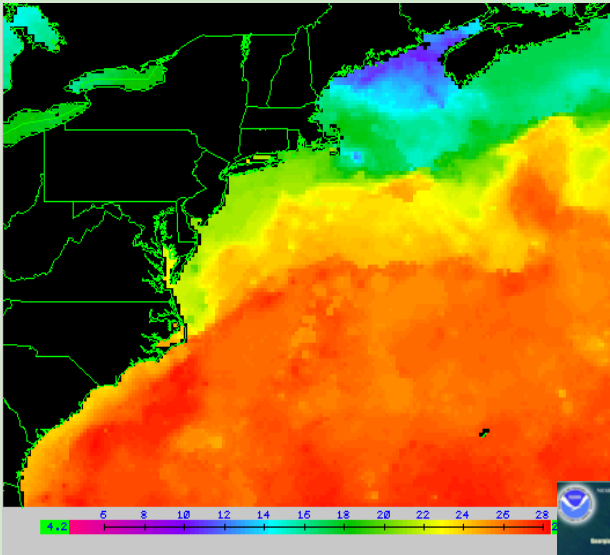
POLAR OPERATIONAL ENVIRONMENTAL SATELLITE PRODUCTS

The NOAA polar operational environmental satellites collect global data on cloud cover; surface conditions such as ice, snow, and vegetation; atmospheric temperatures; and moisture, aerosol, and ozone distributions; and collect and relay information from fixed and moving data platforms. The primary imaging system, the AVHRR/3, consists of visible, near IR, and thermal IR channels. The primary sounding suite flying on NOAA-M is the HIRS/3, AMSU-A, and AMSU-B, which measure atmospheric temperature and humidity. The SBUV-2 instrument is both an imager and a sounder. As an imager, it produces total column ozone maps. As a sounder, it obtains and measures the ozone distribution in the atmosphere as a function of altitude. The SEM-2 contains two sets of instruments that monitor the energetic charged-particle environment near Earth. The TED in SEM-2 provides the data used to determine the level of auroral activity. The SEM-2 MEPED includes four solid-state detector telescopes that are designed to monitor the intensities of energetic particles in the Earth's radiation belts and during solar particle events. Examples of products derived from the processed data follow.



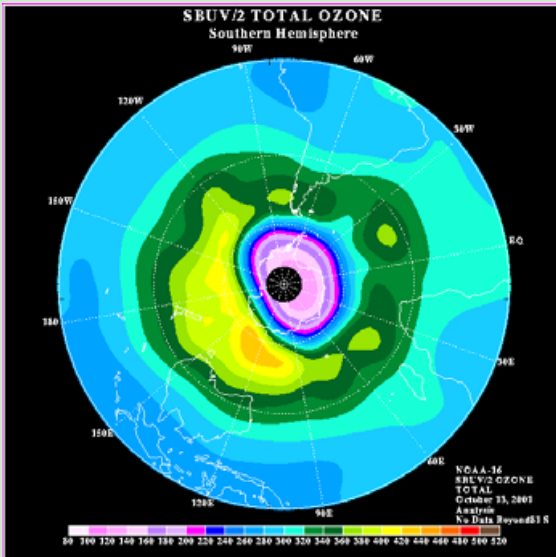
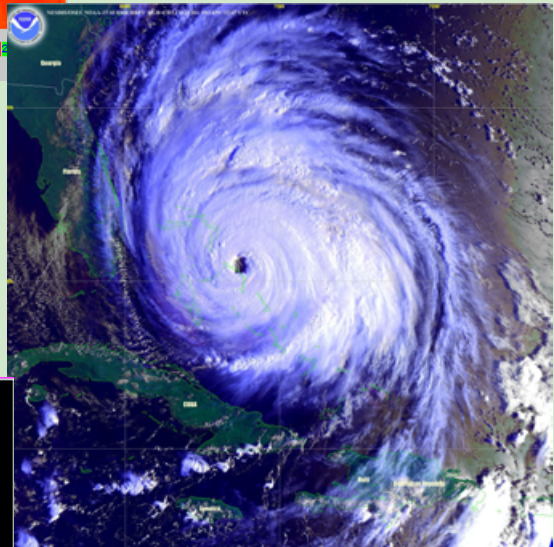
A new satellite-based method for early detection, monitoring, and analysis of drought, using data from the AVHRR, shows that nearly 20 percent of the world's landmass has been stricken by drought during the first two years of the new millennium. During the two-year period, active fires consumed large amounts of forest resources in the northwestern United States. In the Horn of Africa, early drought signs were recorded in January 2000. Over the next four months, the drought expanded and intensified so much that it turned into a national disaster.

NOAA provides satellite-based early drought warnings and related products to customers around the world. Some of the information can be found at <http://orbit-net.nesdis.noaa.gov/crad/sat/surf/vcl>.

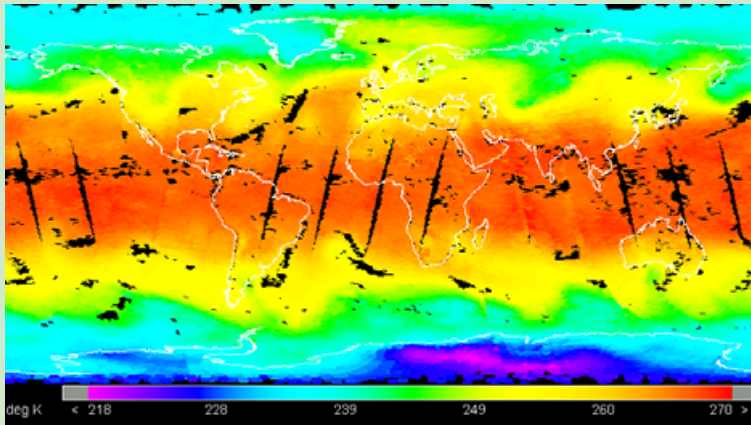


Sea surface temperature products are routinely produced from the AVHRR instruments at global, regional, local, and coastal scales. This image is an example of a local product that shows sea surface temperatures for the North Atlantic off the coast of the United States produced at 14-km resolution from NOAA-16 on October 1, 2001.

This NOAA-15 image of Hurricane Floyd was produced on September 14, 1999. Hurricane Floyd, a Category 4 storm at the time of this image, had sustained winds near the eye of 125 knots (144 miles per hour) and tropical storm-force winds extended outward about 290 miles from the center. This high-resolution 1.1-km image was produced from a composite of channels 1, 2, and 4 from the AVHRR instrument.

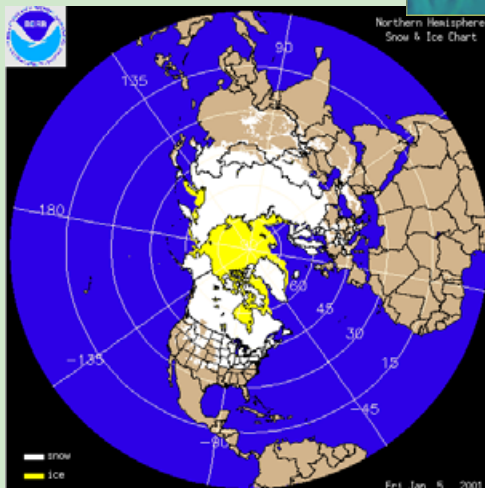
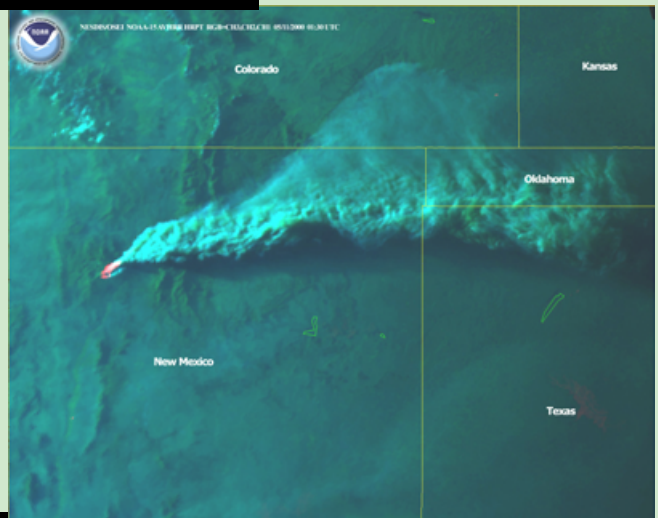


This image of the total ozone product, generated from NOAA-16's SBUV instrument, clearly depicts the Antarctic ozone hole in October 2001. The SBUV instrument is normally flown on POES afternoon satellites. However, because NOAA-M will have a 10:00 a.m. rather than a 7:30 a.m. sun-synchronous orbit, it will have an SBUV instrument. This instrument provides for the generation of individual ozone profiles and layer ozone values from the surface to 0.01 millibar (mb).

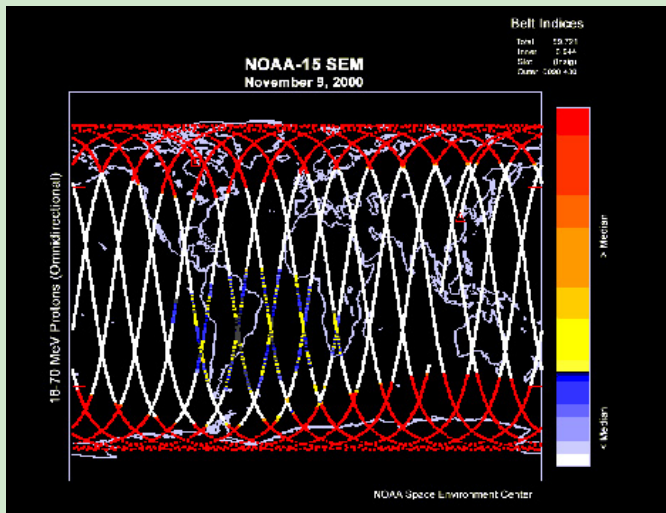


Global atmospheric temperatures are derived from the AMSU-A and HIRS instruments. Temperature products are produced at 40 atmospheric levels from 0.1 mb to 1000 mb. This 500-mb image is from 18 hours of NOAA-16 data, produced on October 10, 2001.

Heat signatures (red) and smoke (light blue haze) are visible from a fire burning near Los Alamos, New Mexico on May 11, 2000. This image was derived by means of a composite of visible and infrared data using the high-resolution NOAA-15 AVHRR instrument data.

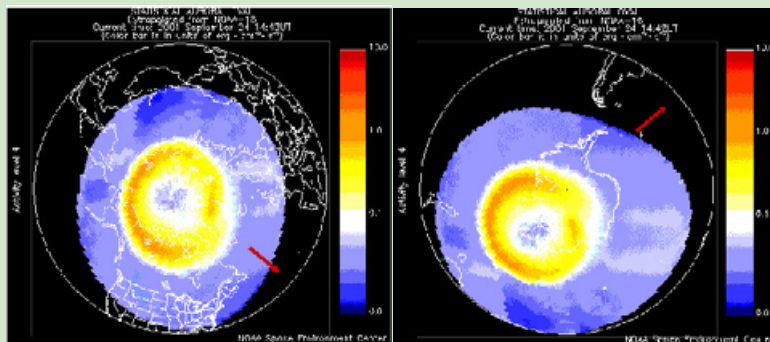
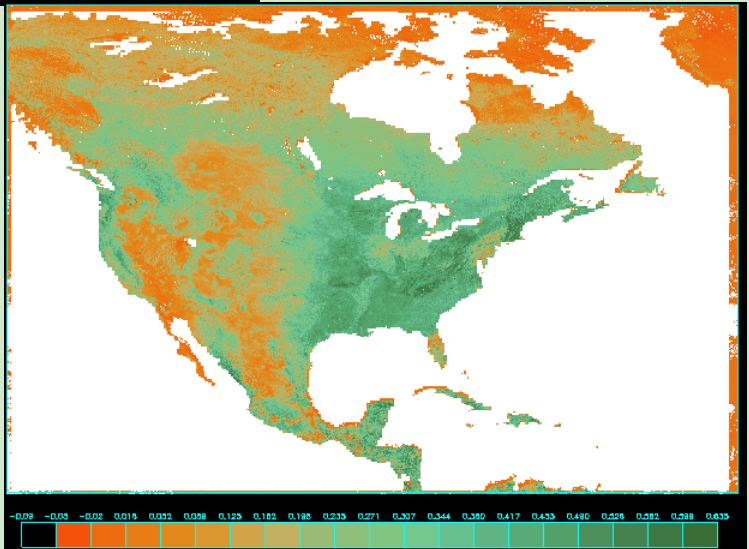


Normalized Difference Vegetation Index (NDVI) products measure the "greenness" of the Earth's surface, which gives an estimation of the density and coverage of green vegetation. NDVI images, derived from AVHRR data, are produced for global and regional scales. Values of the NDVI denote vegetation, rocks and bare soil, or clouds, rain, and snow. This image was produced for North America on October 2, 2001.



This display, generated from NOAA-15's SEM-2 MEPED, shows the responses of the solid-state "dome" detectors that measure the intensities of protons between 16 MeV and 70 MeV throughout the day compared with the median responses of that detector over the past year. The red box shows the satellite location at the beginning of the day. The red triangle shows its location at the time of the last data download.

Snow and sea ice products are generated from the blending of data from the AVHRR and AMSUs, in addition to data from other satellite systems. The new channel 3a (1.6 micron) on the AVHRR can distinguish snow cover from clouds. This image was produced for the northern hemisphere on January 5, 2001. Snow cover is shown in white, while sea ice is yellow.



These plots, generated from the SEM-2 TED, show the current extent and position of the auroral oval at each pole, extrapolated from measurements taken during a polar pass of the NOAA-16 POES satellite. "Center time" is the calculated time halfway through the satellite's pass over the pole.